

Claims:

1. (Currently Amended) A method for providing overwrite detection for an allocable memory block, comprising:
receiving a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;
performing a checksum on the allocable memory block;
storing results of the checksum within the allocable memory block;
generating an overwrite detection pattern for the allocable memory block;
storing the overwrite detection pattern in the allocable memory block, wherein the overwrite detection pattern is stored separately from the results of the checksum in the allocable memory block;
checking the overwrite detection pattern; and
forcing an access violation if one of the checksum is not valid and the overwrite detection pattern has been modified.
2. (Previously Presented) The method of Claim 1, further comprising examining a heap to determine whether the overwrite detection pattern has been overwritten.
3. (Canceled).
4. (Currently Amended) The method of Claim 1-Claim 3, further comprising examining the results of the checksum to determine the presence of memory errors.
5. (Currently Amended) The method of Claim 1, wherein the overwrite detection pattern is written at an the end of the allocable memory block opposite another end of the allocable memory block where the results of the checksum are stored.
6. (Original) The method of Claim 1, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

7. (Original) The method of Claim 1, wherein the overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

8. (Canceled).

9. (Original) The method of Claim 1, further comprising storing a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

10. (Currently Amended) The method of Claim 1, further comprising storing a timestamp within the allocable memory block, wherein the timestamp indicates the time when ~~one of requesting and freeing~~ the allocable memory block is performed.

11. (Currently Amended) A computer storage computer-readable medium ~~arranged for storing computer readable instructions computer-executable components for~~ overwrite detection within an allocable memory block, comprising:

a first component that is arranged to receive a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;

a second component that is arranged to generate an overwrite detection pattern for the allocable memory block wherein the overwrite detection pattern is written at an end of the allocable memory block opposite another end of the allocable memory block in which a header for the allocable memory block is stored;

a third component that is arranged to store the overwrite detection pattern in the allocable memory block;

a fourth component that is arranged to generate a checksum on the allocable memory block;

a fifth component that is arranged to store results of the checksum in the header of the allocable memory block; and

a ~~sixth~~ fourth component that is arranged to store a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

12. (Currently Amended) The computer storage computer-readable medium of Claim 11, further comprising an examination component that is arranged to examine one of the plurality of heaps heap to determine whether the overwrite detection pattern has been overwritten.

13. (Canceled).

14. (Currently Amended) The computer storage computer-readable medium of Claim 13, further comprising a checksum examination component that is arranged to examine ~~the results of the checksum to determine the presence of memory errors.~~

15. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 11, wherein the overwrite detection pattern is written at an ~~the~~ end of the allocable memory block opposite another end of the allocable memory block where the results of the checksum are stored.

16. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 11, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

17. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 11, wherein the overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

18. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 11, wherein the overwrite detection pattern is checked and an access violation is forced if the overwrite detection pattern has been modified.

19. (Canceled).

20. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 11, further comprising a timestamp component that is arranged to store a timestamp within the allocable memory block, wherein the timestamp indicates the time when ~~one of requesting and freeing~~ the allocable memory block is performed.

21. (Currently Amended) A system for overwrite detection in an allocable memory block, comprising:

a computer memory that comprises a heap in which an allocable memory block can be allocated and freed;

a memory allocator that is arranged to receive a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;

a pattern generator that is arranged to generate an overwrite detection pattern for the allocable memory block;

an allocable memory block formatter that is arranged to store the overwrite detection pattern in the allocable memory block; and

a memory timestamp system that is arranged to store a timestamp within the allocable memory block, wherein the timestamp indicates the time ~~when one of requesting and freeing the allocable memory block is performed~~ of:

the requesting of the allocable memory block once the allocable memory block has been allocated; and

the freeing of the allocable memory block once the memory block has been freed.

22. (Previously Presented) The system of Claim 21, further comprising a memory verification system that is arranged to examine a heap to determine whether the overwrite detection pattern has been overwritten.

23. (Currently Amended) The system of Claim 21, further comprising a memory verification system that is arranged to perform a checksum on the allocable memory block and storing ~~the~~ results of the checksum within the allocable memory block.

24. (Original) The system of Claim 23, further comprising a memory verification system that is arranged to examine the results of the checksum to determine the presence of memory errors.

25. (Currently Amended) The system of Claim 23-Claim 21, wherein the overwrite detection pattern is written at an the end of the allocable memory block opposite another end of the allocable memory block where the results of the checksum are stored.

26. (Original) The system of Claim 21, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

27. (Original) The system of Claim 21, wherein the memory overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

28. (Original) The system of Claim 21, wherein the overwrite detection pattern is checked and an access violation is forced if the overwrite detection pattern has been modified.

29. (Original) The system of Claim 21, further comprising a memory indexing system that is arranged to store a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

30. (Canceled).

31. (Previously Presented) The method of Claim 1, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.

32. (Currently Amended) The computer storage ~~computer-readable~~ medium of Claim 18, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.

33. (Previously Presented) The system of Claim 28, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.

34. (New) The method of Claim 1, further comprising storing a timestamp within the allocable memory block, wherein the timestamp indicates the time when freeing the allocable memory block is performed.

35. (New) The computer storage medium of Claim 11, further comprising a timestamp component that is arranged to store a timestamp within the allocable memory block, wherein the timestamp indicates the time when freeing the allocable memory block is performed.